

4-2013

DEPARTMENT OF BIOLOGICAL SYSTEMS ENGINEERING NEWSLETTER, Vol. 7 No. 2, APRIL 2013

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"DEPARTMENT OF BIOLOGICAL SYSTEMS ENGINEERING NEWSLETTER, Vol. 7 No. 2, APRIL 2013" (2013). *BSE Department Magazine*. 17.
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DEPARTMENT OF BIOLOGICAL SYSTEMS ENGINEERING

NEWSLETTER OF ACHIEVEMENT

APRIL 2013

William E. Splinter

1925 – 2012

Bill was born on his grandparent's ranch 5 miles northwest of North Platte, Nebraska on Nov. 24, 1925 and was raised on an irrigated farm. The responsibility and skills he learned on the farm were the foundation for his professional career. Several notable activities in Bill's career include serving as Department Head in Agricultural Engineering at UNL (1968-88), serving as President of ASAE (1978-79), being elected to the National Academy of Engineering (1984), and receiving the John Deere Gold Medal (1995).

His early career path took a fortunate turn after an argument with his University of Nebraska advisor in Mechanical Engineering over having to take a required course in economics. In desperation, the advisor asked Bill just what he wanted to do, and Bill thought that his farm background could help him design machines for agriculture. This led Bill to the Agricultural Engineering Department, whose faculty spoke his language. While in school, he was involved in the Engineering College student magazine, *Nebraska Blue Print*, and served as feature writer and editor. He received a B.S. degree in Agricultural Engineering from the University of Nebraska in 1950 and M.S. and Ph.D. degrees from Michigan State University in 1951 and 1955, respectively.

Bill joined the faculty of the Department of Agricultural Engineering at North Carolina State College (later University) in 1954. He helped develop a mechanical tobacco harvester and mechanical tobacco transplanter, as well as electrostatic dusting and spraying systems. Bill and his group were among the first to conduct human factors engineering studies of the effort and accuracy of workers using a mechanical transplanter. They determined that man's reactions limited the speed of transplanting to around 2 mph (still much better than by hand). They then designed an automatic transplanter (with two patents granted) that dropped four plants, growing in small soil cubes, directly into the row. Bill and his students also conducted research in the mechanical harvesting of cabbage and sweet potatoes.



Bill was hired to be Department Head of the Agricultural Engineering program at the University of Nebraska in 1968, a role that he considered to be his dream job. At that time, the Department and the University were primarily involved in classroom teaching and extension. The Agricultural Experiment Station was the primary research unit for the University, supported by federal funds, but competitive research grants were not a major emphasis.

Bill was successful in bringing in new faculty to build the Department and transform its research and extension activities. Hiring five faculty in irrigation extension to be located off the main campus, in addition to the teaching and extension programs in Lincoln, resulted in a broad irrigation engineering program throughout the state. Nebraska today has more irrigated acreage than any other state. During Bill's tenure, the research program grew, and a Ph.D. program was added as part of an integrated Ph.D. in Engineering.

As President of ASAE, Bill moved all Executive Board and many committee meetings to ASAE Headquarters at St. Joseph, MI, so that staff had immediate access to Board members. He became involved with national and international engineering organizations such as the Engineers Joint Council, American Council on Engineering, and Pan-American Engineering Society. He and Bob Tweedy set up the ASAE Foundation; Bill served as its first full-time president. He played a major role in bringing ASAE into the mainstream of national and international engineering societies.

In 1984, Bill was elected to the National Academy of Engineering at a time when there were only two agricultural engineers serving in the Academy. He served on several committees, including one to select the top 20 engineering developments of the past 100 years, and was able to get Agricultural Engineering recognized as the 7th most important area in engineering.

(continued on page 4)



UNIVERSITY OF NEBRASKA-LINCOLN

BIOLOGICAL SYSTEMS ENGINEERING DEPARTMENT

From the Department Head



Mark Riley

Welcome to the most recent issue of the Biological Systems Engineering Department newsletter. Having joined BSE in the fall of 2012, I am new to Nebraska and have enjoyed this transition. The support from faculty, staff, students, alumni, and friends of the Department has been tremendous, and I am truly grateful for the hospitality.

BSE, the Institute for Agriculture and Natural Resources, the College of Engineering, and the University of Nebraska are at an exciting time of growth and increased impact in our state. Our undergraduate enrollments are at an all-time high. IANR recently announced 36 searches for new faculty, and BSE is in line to have at least two, and perhaps as many as four, joining our ranks over the coming year. Positions relevant to BSE are in the areas of advanced machinery systems, water resources engineering (in Scottsbluff), advanced plant sensing systems, and food safety. All address important issues for agriculture in Nebraska.

This past fall we held our USDA NIFA review in which all Department programs were evaluated. Feedback from the reviewers was very positive, as they identified many strengths that make us unique in our discipline and help us meet the needs of our constituents.

Over the past year, we have lost several important friends including Bill Splinter and Dean Yonts. We miss their collegiality, but remember them fondly.

I hope that you enjoy the newsletter; send us any updates on your activities, and we will share them in the next installment. Check out our revised web site (<http://bse.unl.edu/>) and join our Facebook page (search Biological Systems Engineering at UNL) to stay connected with the most recent news and activities. When you have a chance, stop by the department—you are always welcome to visit.

Best regards,

Mark Riley

Biological Systems Engineering Department Newsletter

Archives

Past issues are on the web at bse.unl.edu/news

Biological Systems Engineering Department Newsletter

Mark Riley Editor

Julie Thomson Editorial Coordinator

Sheila Smith Graphics and Design

Any mention of trade names in this publication does not imply endorsement by Biological Systems Engineering Department or the University of Nebraska.

Biological Systems Advisory Board

gives input to the faculty for the undergraduate programs, research, and extension. The Board also provides input for the ABET accreditation. All volunteers, the members are invited to the Board by the department head and meet once a year. Here we highlight another of these outstanding individuals.



John Davis

John Davis is a Professional Engineer and the Vice President of Engineering for Reinke Mfg. Co. Inc., located in Deshler, Nebraska. Reinke manufactures irrigation equipment, primarily center pivot irrigation systems.

As an engineer working in management, he is concerned with what skills, experiences, and attitudes are important for a new engineer to be successful when starting his or her career. Technical skills are, of course, very important, but there are many other skills to be developed that are equally important. The contributions John hopes to make to the Advisory Board are to recognize and support elements of the educational experience that help promote these less tangible attributes.

WANTED MUSEUM VOLUNTEERS

Become a volunteer at the **Larsen Tractor Test & Power Museum** and experience the unique history of tractor testing and technology dating back to the early 1900s. Volunteers will learn the history of the collection and the Nebraska Test Law in order to share with our visitors. Anyone can be a volunteer and no prior knowledge is necessary. All we ask is that you have a willingness to learn and share. Please contact Museum Manager Lance Todd at ltodd6@unl.edu or call 402.472.8389 for more information. Some Saturdays may be required.

Museum Hours:

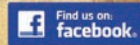
Tuesday - Friday 9 AM - 4 PM
Saturday 10 AM - 2 PM

402.472.8389
tractormuseum.unl.edu

The museum is located on East Campus at 35th & Fair Street, north of Chase Hall.



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Graphic by Lance Todd

Stormwater Management Education in Nebraska

Integrating Extension, Teaching, and Research By David Shelton

What do rain gardens, rain barrels, 4-H and youth stormwater camps, green infrastructure bus tours, and landscape architecture classroom design studios have in common? These are all educational efforts of a grant titled “Improving and Conserving Water Resources through Stormwater Management Education for Community Decision Makers of Today and Tomorrow.”

This four-year effort by a multi-disciplinary team of extension, research, and teaching faculty is training municipal leaders, engineers, landscape architects, landscape professionals, Master Gardeners, homeowners, and students about the advantages of green infrastructure over gray infrastructure for managing urban stormwater runoff.

Gray infrastructure includes street curbs and gutters, storm drains, culverts, and concrete lined channels—designed to convey stormwater away as rapidly as possible. Green infrastructure includes rain gardens, bioretention cells, bioswales, rain barrels, and porous pavement—practices that improve rainfall capture and infiltration before it becomes stormwater runoff.

Stormwater management in both urban and rural areas is a current focus across the U.S. Under provisions of the Clean Water Act, towns and cities with populations greater than 10,000 are required to reduce the amount of pollution in stormwater runoff as well as reduce and better manage runoff volumes. One way to help achieve this is to treat stormwater runoff as a resource to be harvested and used onsite or allowed to slowly infiltrate, rather than viewing it as a problem to be conveyed away as rapidly as possible.

A UNL Stormwater Work Group was organized in 2006 to develop educational programs and materials to address municipal stormwater management through green infrastructure, low impact development, and other best management practices. This team competed for a large USDA grant that included research, teaching, and extension education related to stormwater management. The successful grant provided \$544,500 for a four-year project.



BSE-developed storm runoff simulator used to evaluate design and hydrologic properties of rain gardens.

Kelly Feehan, Extension Educator–Horticulture in Platte County, and a member of the interdisciplinary team, helped direct the many extension education aspects such as training municipal officials and stormwater program managers, Master Gardeners, and homeowners; all-day rain garden workshops/installations; green infrastructure practice tours; rain barrel construction workshops; web-based resources; youth activities; and publication development. The grant enabled the team to hire **Katie Pekarek**, a BSE graduate (B.S. 2006) as a full-time Extension Educator, to help carry out many of the outreach functions of the project.

BSE faculty members **David Shelton** and **Tom Franti** led the research efforts of the grant to evaluate rain garden hydrologic and plant growth attributes, which will help improve rain garden installation design programs. Steven Rodie, an agronomy and horticulture faculty member in landscape architecture and part of the team, expanded curriculum in green infrastructure, low impact development, and stormwater BMP design and construction in undergraduate classes. Several studio design projects have addressed real-world clients with stormwater management projects. These three faculty members also developed and delivered extension education activities and programs.



Extension Educator Katie Pekarek (B.S., BSE 2006), shown here at left, instructs a participant at a rain barrel workshop.

Graduate students who have contributed to project objectives include: **Andrew Anderson**—BSE (B.S. 2010; M.S. 2011); Marilyn Liebsch—Agronomy and Horticulture (M.S. 2011); Andrew Szatko—Community and Regional Planning Program, College of Architecture (M.C.R.P. 2012); and **Daniel Tucker** and **Patrick Walsh**, Graduate Research Assistants—BSE.

With support from numerous Nebraska communities and organizations, this project has successfully blended extension programming with several University teaching and research components. The resulting synergy has helped communities and individuals more effectively manage stormwater quality and quantity while building a readily-accessible knowledge-base that will continue to support future initiatives and programs.

For information on stormwater programs at UNL, visit the website: <http://water.unl.edu/stormwater>. Information on rain gardens can be found at: <http://water.unl.edu/web/landscapes/rain-gardens>.

(Splinter continued from page 1)

In 1988, Bill was selected as Associate Vice Chancellor for Research at UNL, after 20 years as Head of Agricultural Engineering. At that time, the University had one patent providing royalties and scattered areas of sponsored research. He assisted in setting up spin-off companies based on University research. After two years, he was responsible for the Graduate College, the University Press, and the Nebraska State Museum. He was also involved with the NU Foundation and the business community in setting up a Research Park in northeast Lincoln. Research grant funding increased up to \$75M, moving the University from a Carnegie Category II research institution to a Category I.

Bill retired in 1993, and that set the stage for the next round of opportunities, including working for the ASAE Foundation and then serving as interim Dean of Engineering at UNL. At his own expense, he rented an apartment in Omaha so that he could spend more time with the faculty located in Omaha and with the UNO Deans and Chancellor as well.

Along with these “downtown” functions, Bill had also been involved in preserving the history of the tractor testing program and the artifacts gathered by previous Agricultural Engineering faculty over the years. Against the interests of University management, Bill led in the utilization of the original Tractor Test building to house these historic items. After being conditionally allowed to raise funds to repair the roof and to occupy the building, but without any University support, the Nebraska State Museum incorporated the Tractor Museum as an auxiliary unit. Bill was named Director and was given a half-time staff member for Museum work. The building was recognized with a bronze plaque as an ASAE Historic Site in 1980, and the Museum was dedicated in 1998 as the Lester F. Larsen Tractor Test & Power Museum.

In 2003, Bill was again asked to serve as Interim Dean of Engineering (a position he described as Intermittent Dean). At Lincoln, a major donation for new engineering facilities by Henry Othmer was funding construction of new facilities adjacent to the Walter Scott building, and Bill was the first to occupy the dean's office there. He eventually returned to the Larsen Tractor Museum, and funding allowed an upgrade

in the support position, which let Bill step out as Director in 2011. He left professionally designed exhibits, and an active support group of volunteer guides, and the strong Friends of the Museum organization that he had organized.

Bill considered the most significant professional recognition of his career to be the dedication of the Agricultural Engineering Annex as the Splinter Laboratories in 2004. This facility had special meaning to him as he had laid out the design to specifically house the major noise generating functions of the Department. It includes the Nebraska Tractor Test Lab, the engines lab, the machinery lab, and the shop, along with flexible research laboratories.

Bill was an avid pilot, flying solo just out of high school and buying his first plane while at N.C. State. This was convenient given the distributed locations of many land grant university activities. His professional career allowed him to travel world wide, having visited 39 countries and flown around the world four times. His favorite highlight was spending six months with the University of Melbourne in Australia. He concluded his flying when a pacemaker was installed, having flown nearly 5,000 hours with an instrument rating. Bill also served in the U.S. Navy Reserve as a yeoman in WWII and as a radar man on a destroyer during the Korean War.

Bill Splinter Legacy

As one of the founders of the Larsen Tractor Test & Power Museum, Bill Splinter has left us an important legacy. As a memorial to Bill, the Splinter Gallery will be constructed at the Museum. The project is projected to cost \$25,000, and about half that total has been raised so far. If you wish to donate to the Bill Splinter Memorial, please send your donation to the Larsen Museum.

In 1981, Bill established the William E. and Eleanor L. Splinter Fund to benefit BSE students. At present, this generous gift to the BSE Department can be used to make an award to an undergraduate student for a scholarship of up to \$2,000 and for a graduate fellowship up to \$5,000 annually. Bill's commitment to supporting the work of students in BSE is another aspect of the legacy he's left us.

In Memorium



C. Dean Yonts was born Jan. 11, 1951 to Harold and Eva Yonts, homesteaders in the Whistle Creek area 15 miles southeast of Powell, Wyoming. He held B.S. and M.S. degrees in Agricultural Engineering from the University of Wyoming-Laramie. Dean was an Associate Professor of Biological Systems Engineering, assigned to the UNL Panhandle Research and Extension Center in Scottsbluff. As research and extension educator, Dean worked with irrigation management to maintain surface and ground water quality, sprinkler and furrow irrigation water management, and management of limited water supplies for irrigating sugarbeets and dry beans.

Dean and his wife Kathy had resided in Scottsbluff since 1975, the year of their marriage. They have two children, Travis and Marissa, and Dean coached soccer, softball, baseball, helped with Boy Scouts and Girl Scouts and taught Sunday school.

The Research and Extension Center created the Esprit de Corps Award in Dean's memory to recognize internal efforts that epitomize his qualities of “being a team player, going the extra mile and making the extra effort,” and presented the first award to his family. C. Dean Yonts passed peacefully away July 6, 2012 surrounded by family after an extended illness.

International Student Summer Field Course in Irrigation

By Dean Eisenhauer

Eighteen graduate students that are studying Water Science and Engineering at the UNESCO-IHE Institute for Water Education in Delft, The Netherlands participated in a two-week field course offered by UNL in the spring of 2012. The students were from Costa Rica, Ethiopia, Eritrea, Indonesia, and Uruguay. The course was partially sponsored by the Daugherty Water for Food Institute and taught by UNL Professors **Dean Eisenhauer**, Biological Systems Engineering, and Ed Harvey, School of Natural Resources. The students were accompanied by two instructors from IHE, Laszlo Hayde and Sur Suryadi. The Daugherty Water for Food Institute has developed partnerships with IHE that include sharing students through field courses, development of a double-degree M.S. specializing in Water for Food,



Colby Gardine of Eco-Drip Subsurface Drip Irrigation explains subsurface drip irrigation to UNESCO-IHE students.



UNESCO-IHE students learn how to gauge stream flow using a Doppler meter.

offering joint short courses for the global water industry, and development of research in hydroinformatics.

During the two week course, the students participated in nine field and laboratory sessions in the Biological Systems Engineering water hydraulics lab in Chase Hall, at the Agricultural Research and Development Center near Mead, at a southeastern Nebraska farm, and at the saline wetlands near Lincoln. Students attended a day of the Global Water for Food Conference and visited the Central Platte Natural Resources District. A visit at the South Central Agricultural Lab was hosted by BSE Professor **Suat Irmak**. The students also toured irrigation industries in eastern and central Nebraska, including Valmont Industries, Great Plains Meter, T-L Irrigation, Flo-Serve, Hastings Irrigation Pipe, Eco-Drip, and Diamond Plastics. They were hosted for two days by the Central Nebraska Public Power and Irrigation District, which included stops in their water delivery area near Loomis, Johnson Lake, and Lake McConaughy and an overnight stay at their lodge at Jeffrey Reservoir near Brady. A Salt Dogs game in Lincoln and a great tour of Memorial Stadium were included.

Eisenhauer and Harvey agreed that this was a wonderful group of students who



UNESCO-IHE students learn about centrifugal pumps in the BSE water hydraulics lab.

were eager to learn and felt privileged to be able to study in both The Netherlands and the United States. IHE awards nearly 200 master's degrees in four different areas of water each year, with about 87% of the graduates returning to work in their home countries in water development, water management, and water policy.



International students measure water distribution under center-pivot irrigation at UNL's Agricultural Research and Extension Center

Where in the World? *Biological Systems Engineering Department affects the world and has partnerships that span the globe. Here are some of the places BSE faculty have visited this past year.*



World Challenges and Solutions for Sustainable Food Security

Dr. Jeyam Subbiah served as a technical chair for the conference, conducted by Indian Institute of Crop Processing Technology (IICPT) a premier institute for food processing in South India under the Ministry of Food Processing Industries. UNL was one of two knowledge partners for this workshop. Since 2008, Dr. Subbiah has actively collaborated with IICPT, hosting three scientists, one Ph.D. student, and two M.S. students. In 2009, UNL signed a Memorandum of Agreement with IICPT. Nebraska delegates included Dr. Rolando Flores, Dr. John Rupnow, and Dr. Gordon Smith (VP, ConAgra Foods).

After the South India conference, Dr. Subbiah participated in a North India international conference organized by the National Institute for Food Technology and Entrepreneurial Management, another premier food processing institute. During this visit, a Memorandum of Understanding with UNL was signed. He also attended the Asian Food Security Conference in Osaka, Japan, Oct., 2012.



Dr. Jeyamkondan Subbiah addresses the closing ceremony of the 3rd International Conference in Food Technology in India, Jan., 2013, with almost 1000 participants.

Mechanized Systems Management:

Where We've Been, Where We're Going

By James Roeber, Senior MSYM

I sat down with Mechanized Systems Management professor and faculty advisor Dr. Jack Schinstock to discuss his thoughts on the program and what direction he thinks the program should take. According to Jack, the program is at “peak enrollment, graduating the largest classes, and graduates in industry are demanding the highest salaries of all programs in CASNR.” With learning outside of the classroom being a major influence in hiring, about 60% of students take internship opportunities, and over the last decade, at least 25% of students have done education abroad in locations such as Argentina, Costa Rica, and New Zealand.

The program originally was called Mechanized Agriculture when it was started in 1958 by visionary **John Sulek**. Sulek was the largest influence at UNL and within ASAE to develop a program that would prepare “agricultural students interested in farm operations or in sales and service work” and “help farmers invest in the appropriate-sized power units and field equipment.” Many of these principles are still employed today in industry and classes. Over the years, however, the territorial sales and service opportunities became limited with consolidation of companies and the introduction of the computer. This shift in the landscape of agriculture would give way to another influential visionary, **Ken Von Bargen**. Von Bargen recognized that the Mechanized Agriculture program restricted student opportunities after graduation. He led a proposal to change the structure of the major to include agriculture operations, mechanized science, processing operations, and business, which includes sales and marketing facets. The change was tailored to students with interests in application, operation, and management of equipment, natural resources, and commodities. In 1992, after 34 years, the program changed its name to Mechanized Systems Management (MSYM) to reflect the new direction.

MSYM has transitioned from a farming oriented curriculum to operations and resource management on the technical side, and on the human side, the rural male student population with a Nebraska background has expanded to include students of both rural and urban backgrounds and more out-of-state students and females. The program has also become less of a transfer program, recruiting more freshmen due to the increase in employment prospects. A large portion of students are still transfers from Mechanical, Agricultural, Civil, and Electrical Engineering who realize they want more hands-on experience and to focus on managing systems rather than designing them. The difference between Engineering and MSYM is that Engineering students work in the area of design, using engineering principles, to improve products, while MSYM students encompass the management of engineered systems and the transfer of energy.

Across the country, programs have similar curriculum, but the lack of a common name has created the largest downfall for the programs in communicating to prospective employers. While



Jack Schinstock (right) and James Roeber (left) teaching assistant, consult with students during class.

UNL has the only MSYM major, other institutions offer Ag. Systems Management, Ag. Operations Management, Ag. Systems Technology, and Ag. Engineering Technology (such as Purdue, Iowa State, Kansas State, Missouri, and Illinois). Jack reports there are 19 programs that offer similar degrees.

Mechanized Systems Management students have recently been hired by the large equipment companies, all major irrigation companies, processes and milling operations, railroads, and seed companies such as AGCO, CNH, CLAAS, Cargill, ConAgra, John Deere, ADM, Reinke, Valmont, Lindsay, Union Pacific, BNSF, Monsanto, Dow AgroSciences, Syngenta, and many others involved in farm production, machine production, energy transfer and other systems. Graduates use skills for product testing, marketing, support, sales, not just for field machines, but also for operations management, systems management, and any system that deals with energy transfer by use of machines.

A master's program in MSYM is available and is most beneficial if a student would want to be an Extension Educator or work for the NRCS. MSYM students employed in business or industry often pursue an M.B.A. at the encouragement of their employer.

From the first graduate, **M. J. Anderson**, in 1960, the program has grown to 90 students, and through the visionary leaders in the Department, it has changed to reflect current demands of business and industry. Jack reports, “Employment prospects have been so good recently, in the last decade, that we’ve extended our efforts in recruitment.” New students could expect changes in the curriculum to reflect the needs of the railroad and transportation industries, livestock systems, and energy fields.

Coming and Going



Mark Riley joined BSE as Professor and Department Head on October 15, 2012. Most recently, he was Professor and Department Head in Agricultural and Biosystems Engineering at the University of Arizona, having served in that role for 3 years after joining the UA faculty in 1997.

Mark is originally from Michigan and enjoys the return to the middle of the country. His wife Jill is from Colorado; they have two children ages 8 and 10.



Dr. Derek Heeren, P.E., joined the faculty in August, 2012, as an Irrigation Engineer and Assistant Professor with 60% research and 40% teaching appointment. Derek is part of the Robert B. Daugherty Water for Food Institute (DWFI) cluster hire. He is developing an interdisciplinary research program in irrigation management, with specific interests in variable rate irrigation, nutrient leaching, and irrigation applications

in developing countries. His teaching interests include soil conservation and watershed management, advanced irrigation management, and vadose zone hydrology.



Joe Luck joined BSE in April of 2012 as Assistant Professor and Extension Specialist for Precision Agriculture. His responsibilities include developing extension and research programs for the application of precision agriculture technologies in crop production, as well as teaching a class focused on site-specific crop management. Joe comes to UNL from the University of Kentucky where he studied machine

systems automation engineering and received his Ph.D. in Biosystems and Agricultural Engineering. He is familiar with typical crop productions practices found in Nebraska, as he grew up on a family farm in western Kentucky that produced corn, soybeans, wheat, and cattle.



Jenny Melander returned to the Department last fall as Extension Assistant Professor in BSE. She earned B.S. and M.S. degrees from the Department in 2003 and 2005. She completed a Ph.D. and spent two years as a post-doctoral fellow at the University of Missouri-Kansas City. Her past research focused on developing and testing new biomaterials for dental and orthopaedic

applications. Her focus now is to develop biomedical engineering youth programs and expand non-formal STEM education through outreach programming in the areas of food, fuel, and water; she hopes to empower youth through STEM creativity.



Francisco Munoz-Arriola, Hydroinformaticist, began February 2013, as Assistant Professor with teaching and research appointments. He is part of the Water for Food Institute cluster hire and will conduct integrated hydrologic modeling for improved water management.



Amy Millmier Schmidt, a Livestock Bioenvironmental Engineer, started August 1, 2012 in BSE as an Assistant Professor in the area of manure management doing both research and extension work, helping livestock producers make environmentally sound decisions for their operations. Her research focus is related to fate and transport of manure nutrients and

pathogens, alternative manure management practices, and manure treatment technologies. Through her integrated extension program, she provides support to producers and related stakeholders to help improve manure and environmental management practices in the state.



Amber Patterson began in our department June 4, 2012, when she came to Nebraska from New York City. She is the Office Associate in the West Bay area of the second floor, Chase Hall. She holds a B.F.A. in Fine Arts and Art Education from Rocky Mountain College of Art and Design.



Rodney Rohrer, Research Engineer, a BSE MSYM alumni (2000), and former student employee of Nebraska Tractor Test Lab, began an engineering position with NTTL in July. Formerly employed by Caterpillar with roles in test structure design and machine performance, he is working toward his M.S. in Ag. Engineering.



Lance Todd is the Manager of the Larsen Tractor Test & Power Museum, and began here in June of 2012. Having an Art Degree with a K-12 Education Endorsement from Doane College in Crete, NE, he specializes in graphic design, exhibit construction, and restoration. He envisions big plans for the Larsen Tractor Test & Power Museum.



Doug Triplett, Tractor and Machine Testing Coordinator, graduated from the Dept. in MSYM (2008). He had been working at UNL's Facilities Maintenance since 2010; in December he joined the Nebraska Tractor Test Lab staff. His speciality is controls, instrumentation, and data acquisition, and he is teaching the MSYM312 engines class this semester.



Jan Hygnstrom left BSE in March 2012 and is now working in Agronomy and Horticulture as Pesticide Safety Education Program project manager, developing safety education materials for pesticide applicators. She also works for Southeast Research and Extension Center, developing website materials for acreage owners. Jan had been in BSE since January 1993.

AWARDS

Dr. Deepak Keshwani received the Henry K. Dleinkauf Family Distinguished New Faculty Teaching Award, 2012.



Dr. Dennis Schulte received the Holling Family Distinguished Teaching/Advising/Mentoring Award, 2012, for the College of Engineering.



Dr. Derrel L. Martin received the Heermann Sprinkler Irrigation Award, 2012.



Dr. Roger Hoy and **Dr. Deepak Keshwani** received "Certificates of Recognition for Contributions to Students" for 2012-2013 from the UNL Parents Association and UNL Teaching Council. The recognition ceremony was held on February 8, 2013.



Dr. Angela Pannier was awarded Mortar Board's Professor of the Month. Mortar Board is UNL's honor society dedicated to scholarship, leadership, and service. It is comprised of UNL seniors.



From left: Chuck Burr, Kim Cluff, Randy Pryor

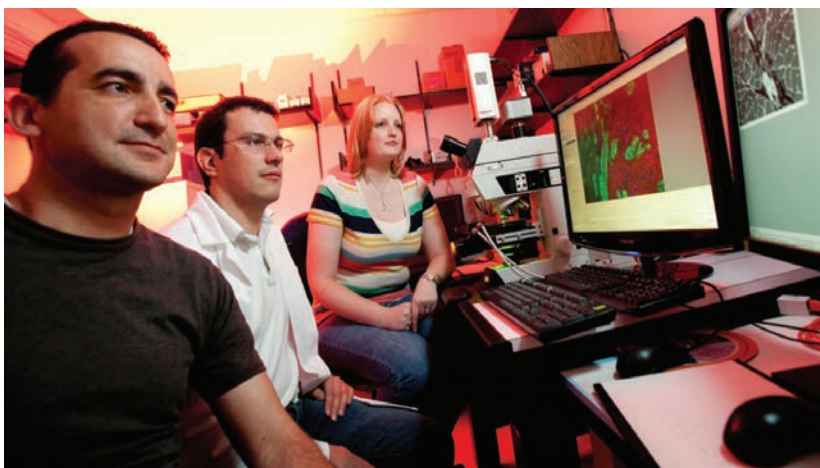
Holling Family Awards

The Holling Family Award Program for Teaching Excellence was made possible by a gift from the Holling family to honor their pioneer parents. The program is designed to recognize outstanding contributions by faculty and teaching assistants in CASNR, UNL Extension, and the Nebraska College of Technical Agriculture. Two Department alumni and a BSE Ph.D. candidate, received awards March 7, 2012.

Charles (Chuck) Burr is an Extension Educator at the West Central Research and Extension Center. He received a Senior Faculty Teaching Excellence Award. Chuck received a B.S. in 1985, and an M.S. in 1986 in Mechanized Agriculture, and joined IANR in 1990. He is a member of the UNL Extension Irrigation Core Group, and works with irrigators and those advising irrigators by providing knowledge and skills to efficiently maximize a constrained water supply.

Kim Cluff received a Teaching Assistant Teaching Excellence Award. He has been a teaching assistant the last three years in AGEN/BSEN 225, and taught AGEN/BSEN 344 in the 2012 spring semester. He implemented a variety of digital applications into his teaching, even writing a computer program to automatically email graded materials back to individual students. Kim completed all of his degrees in the Department, and received his Ph.D. in August. In January 2013, he began as Assistant Professor in the Bioengineering Program at Wichita State University.

Randy Pryor is an Extension Educator, and is based at the Southwest Research and Extension Center. He received a Senior Faculty Teaching Excellence Award for leadership and teaching in a wide range of subjects. Randy presents no-till workshops, is part of the Nebraska Ag Water Network, and coordinated communication among The Field to Market group. He formed the Saline County Wind Association to study wind rights and regional wind energy opportunities. He received a B.S. in 1980 and a M.S. in 1982, both in Mechanized Agriculture. He began his IANR career in 1980.



Kim Cluff, front left

A Journey from Graduate Assistant to Assistant Professor

The BSE Department is well known for teaching, and it is highly unusual that a graduate student teaches a core requirement course, but **Kim Cluff** took the initiative to become the instructor for Biological and Environmental Transport Processes (AGEN/BSEN 225). He was a teaching assistant for a large class, with multiple lab sections, for 3 years. After taking the graduate "Advanced Teaching Strategies" course, he instructed the AGEN/BSEN 344 (Spring 2012). Using Tablet PC and Microsoft OneNote, Kim walked the large classroom, while writing on the Tablet and projecting it on the screen. He graded assignments electronically with Tablet and wrote a computer program to automatically email graded materials back to the students. As a result, he was nominated by his students and received a UNL Teaching Excellence Award.

Kim transferred to UNL from the University of Arizona during his senior year (Fall 2006). After graduation (Spring 2007) he started his master's program in food and bioproducts engineering under the supervision of **Dr. Jeyamkondan Subbiah**, Associate Professor in BSE. Kim's thesis focused on developing a hyperspectral imaging based on optical scattering to predict beef tenderness. Beef is the largest food industry in Nebraska, and there are no instruments available to sort beef carcasses based on tenderness. As part of a team, Kim was instrumental in designing and fabricating a portable hyperspectral imaging system to acquire images of ribeye exposed from the hanging carcasses in a beef packing plant environment.

His Ph.D. work, under the guidance of Dr. Subbiah, applied his skills in image processing and pattern recognition to biomedical applications. Well-organized and a good communicator, Kim worked on an interdisciplinary project, with investigators from BSE, UNMC clinicians, biochemists, and electrical engineers, in developing fluorescence microscopy and Raman spectroscopy for characterizing the extent and type of muscle damage that occurs during peripheral arterial disease.

Kim provided further service to BSE as the graduate student member of NIFA review team (Fall 2012). He also advised undergraduate students in capstone design projects and provided input in the design of the renovated teaching room, LWC 116.

In Spring 2013, Kim joined Wichita State University as an Assistant Professor in the Biomedical Engineering Department and moved his family (wife, Kara, and their son and daughter) to Kansas. He continues his research in imaging for the biomedical field.

Adam Frerichs' model farm on display at the Larsen Tractor Test & Power Museum.



New at Larsen Tractor Test & Power Museum

Lance Todd, former Art Director at Speedway Motor's Smith Collection Museum, is the new manager of the Larsen Tractor Test & Power Museum (LTM). His first major project was to construct a new display to tell the history of the Nebraska Test Law using the Minneapolis Ford tractor and the Rumley Oil Pull placed on a dirt surface with a 12' tall wallpaper of a corn field backdrop. The newest display features the first tested tractor model, the Waterloo Boy Model N. Plans are underway for a display that pairs the recent donation of a fully restored 1937 Allis-Chalmers WC from Clarke Mundhenke of Lincoln with the collection's 1936 WC, once it is restored.



The LTM has a new logo! This official brand will allow for tourist and product marketing. LTM is reaching out to visitors and supporters via Facebook and the website: tractormuseum.unl.edu, and will also be participating in CASNR Week with an Open House and Tractor Show on Sat., April 13. The UNL Tractor Restoration Club is being revitalized at the Museum as well. An award-winning model farm, built by Adam Frerichs, a freshman Ag. Engineering major and student worker at the Tractor Test Lab, is on exhibit to June 1. Bring your family and friends to see what's new at Larsen Tractor Test & Power Museum. Contact Lance Todd to get information about LTM, to participate in events, to volunteer, or donate: ltodd6@unl.edu or 402-472-8389.

Check this out

Video posted on the Lester F. Larsen Tractor Test & Power Museum - see: <http://www.youtube.com/watch?v=qgLA3H6xpV0> with our very own **Lance Todd**, Museum Manager.

Student News

We have GREAT STUDENTS:

Our "dashboard" report shows that at the end of this past semester, 130 students had a 3.5 or better cumulative gpa in BSEN or AGEN. This is nearly half of our student body. Wow!



UNL Mortar Board students present their Professor of the Month Award to Dr. Angela Pannier. Mortar Board is the senior honorary society dedicated to dedicated to scholarship, leadership, and service.



Fun times at Biomedical Engineering Society (BMES) game night. Yes, we have Operation!

2012 E-Day Incredible Edible Vehicle Design Competition



Student teams each designed a car from edible/food materials and recorded the calorie content for each component. The competition involves distance traveled off a ramp and how well the cars stay together. Proof of edibility occurred after the run, when the teams had to eat the car. This year's competition was the largest ever and included exhibits and displays by upperclassmen, area companies, and alumni. The local TV 10/11 News provided coverage with a short story on the nightly news. Employers also exhibited information and displays. The annual event is part of the E-Day activities and is free and open to the public.

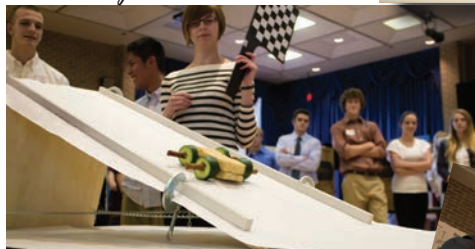
Mark Riley waves the starting flag



Measuring the run



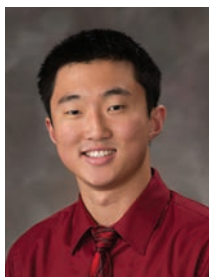
Durability and distance



*The winning team (from left):
Samantha Nelson, Tuan Nguyen,
Nick Gerken, Ryan Forney.*

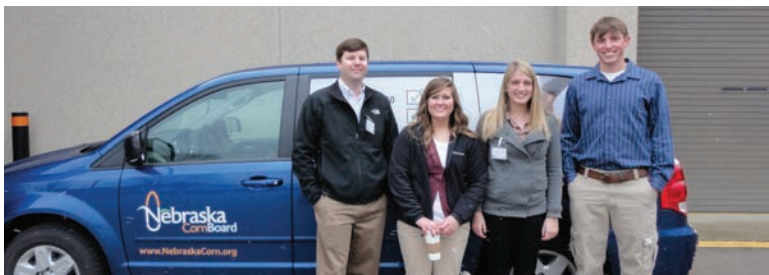


Student News



Leadership and Academic Award

One of our recent Biological Systems Engineering graduates, **Tim Kinoshita** was one of four from UNL that received the William N. Wasson Student Leadership and Academic Award presented by the National Intramural-Recreational Sports Association. Tim is currently working with Dr. Wayne Woldt on Unmanned Aircraft Systems in Agriculture and Natural Resources.



ASABE Student Branch

officers from the UNL Department of Biological Systems Engineering attended the 2013 ASABE Midwest Regional Rally held on March 1-2, 2013. The rally featured students from seven universities across the Midwest. Attendees from UNL (*pictured left to right*) were **Dr. Joe Luck** (advisor), **Noel Menard** (Senior, AGEN), **Lauren Wondra** (Senior, BSEN), and **Aaron Vancura** (Junior, AGEN). UNL's participation was supported by the Nebraska Corn Board, who provided transportation to and from the meeting.



**BIG RED
ROAD SHOW**
UNIVERSITY OF NEBRASKA-LINCOLN

Keith Ozanne (BSEN) above, attaches a biomedical sensor to **Colton Knickman** (MSYM). The sensor was one of the interactive BSE activities at the annual Big Red Road Show outreach event in Omaha,

showcasing UNL majors and experiences. Over 3,300 students, parents, and community members attend the Road Show. BSE also displayed the Quarter Scale Team tractor and the Unmanned Aerial Vehicle. All three majors were well represented by students and faculty.

Exploring Renewable Energy in Costa Rica

Casey Heier, BSEN major from Columbus, Nebraska, with a minor in Energy Sciences, traveled in December to Costa Rica for 12 days with The Global Renewable Energy Education Network (The GREEN Program), an organization that aims to make "the words of a traditional textbook jump off the page and into the minds and hearts of our students" through hands-on education at renewable energy facilities and sustainable site visits.

Casey was one of 20 students (the only Nebraskan) chosen for the trip. He paid his own way, helped by scholarship funding. He's familiar with international travel, as operations director for the nonprofit World Energy Project, which conducts humanitarian engineering work in several locations in Africa.

His engineering background and WEP involvement got a real boost from The GREEN Program experience. He spent mornings in classes on specific renewable energy topics: geothermal, windpower, solar, and more. then shuttled to sites where the energy topic was in action: a windfarm, a hydro power plant, and a biomass facility processing sugar cane products.



Casey and TGP friends hiked through the forest to a natural waterfall and jumped in for a swim.

Casey's favorite site trip was the sugarcane processing plant, where both sugar and ethanol were made, and electricity was generated from burning the stalks (processing waste). Excess power, that the plant could not use, was then sold. The trip was a vivid demonstration of the concepts Heier had studied with BSE

Assistant Professor **Adam Liska**, who leads the Energy Sciences Minor program.

Casey said that 80% of Costa Rica's total energy used (including transportation fuels, cooking gas and more) is from renewable sources, and 95% of the country's electricity is produced from renewable sources.

He saw the importance of seeing renewable energy production in person—what the technology looks like when it's implemented. Talking with engineers at the windfarm and the geothermal locations was great, and he looks forward to more contacts to connect him with opportunities in the renewable energy field.

Student News

CLAAS Scholarships Awarded

Scholarships awarded by CLAAS Omaha, LLC gave students from the UNL American Society of Agricultural and Biological Engineers (ASABE) student club the opportunity to attend the Agriculture Equipment Technology Conference (AETC) in Kansas City, Missouri in January, 2013. Maury Salz, President of CLAAS, stands with the UNL award recipients in front of a CLAAS Lexion combine. AETC is an annual event that showcases the latest in agricultural equipment and technology innovation.



UNL students pictured left to right: Shane Forney, Ethan Mosel, Bob Olsen, Zach Wacker, Joe Timmons, Dylan Smith, Wesley Schaad, Noel Menard, Aaron Vancura, Sam Marx, David Lindquist, with Maury Salz—President of CLAAS. Photo credit: Joe Luck.

Quarter Scale Team

This year's UNL Quarter Scale Team is comprised of students in Agricultural Engineering, Mechanized Systems Management, Mechanical Engineering, and Electrical Engineering. Team captains **Noel Menard**, **Austin Zimmerman**, and **Austin Petersen** are working on a 4WD design for 2013. Quarter Scale Team advisors are **Dr. Roger Hoy** and **Dr. Joe Luck**. The team accepts sponsorships and donations to build their tractor and travel to compete against 30-35 teams from across the U.S. and Canada. The 2012 team tractor, a 2WD design, took 7th place at the ASABE competition in Peoria, IL last spring and will return as a modified "X team" tractor this year. Team captains in 2012 were **Jared Speichinger**, **Kurtis Charling**, **Matt Rahe**, and **Leo Steffel**.



Back row: (l) Dr. Roger Hoy, Matt Rahe, Jared Speichinger (r) Kye Kurkowski, Austin Petersen, Seth Oliverius; Front row: (l) Keith Prothman, Noel Menard, Joe Timmons, Austin Zimmerman (r) Bob Olsen, Leo Steffel, Melissa Kesterson.

Goldwater Scholarship



Jared Paul Ostdiek has won a highly competitive, national Goldwater Scholarship for his excellence in science. Jared, from Columbus, a junior BSEN

major, believes receiving a Goldwater will provide future career opportunities. He is currently working to design a device for minimally invasive surgery. He is a University Honors Program student and has had a UCARE fellowship with associate professor of mechanical and materials engineering Carl Nelson. Jared's goal is to work in research and development at a medical device design company.

National Science Foundation Graduate Fellowship



Abby Kelly, (B.S., BSEN 2012) received the National Science Foundation Graduate Fellowship for 2012-2015. Abby was also

chosen Outstanding Senior in the Biological Systems Engineering Department, 2012, and she received the O.J. Ferguson Outstanding Overall Senior Award, 2012. She is on the graduate student council of ASUN and is currently an AGEN/BSEN master's degree student with Dr. Angela Pannier.

Alum News

Carrie (McMurray) Romero (2006, B.S., BSEN) passed the Professional Engineering exam in October 2011 and was promoted to Associate Engineer at Olsson Associates, where she has worked for 5 years. Carrie and her husband live in Papillion.

Jason Kepler (2007, B.S., MSYM) was promoted to Farm Bill Programs Specialist in the Arizona NRCS State Office, Phoenix, after 14 months as a District Conservationist. In this position he oversees technical and programmatic aspects of the air quality, wildlife, and easement programs authorized in the Farm Bill.

Jason Vogel (1995, B.S., BSEN) has been honored by the Oklahoma Cooperative Extension Service for creating and operating its outstanding faculty and field staff program. He received the recognition for his Stormwater Management Program. Jason is the OSU Cooperative Extension stormwater specialist in the University's Division of Agricultural Sciences and Natural Resources.

Johnathan McCoy (2011, B.S., BSEN & B.S., AGEN) is working full-time in the Detroit Metro area (MI) at Orchid Orthopedics Solutions as a Project Engineer working with new orthopedic implants. He is also a full-time student at Lawrence Technological University pursuing an M.S. in Mechanical Engineering with an emphasis in Mechatronics.

Kevin Tacke (2006, B.S., AGEN) is Project Engineer for AGCO Corporation, Hesston, Kansas. He and wife Jeana, have a new baby girl (Jorja Josephine) and are both very excited for their first child.

Abdulelah Al-Faraj (Ph.D., AGEN) is Associate Professor at King Saud University in Riyadh, Saudi Arabia.

Will Daniel Corman (B.S., AGEN) currently working on the development and design of future harvesting products for John Deere's Harvesting Product Line. He credits his farm background along with his multi-disciplinary training in agricultural engineering as being a major advantage in his career.

Matthew Wold (M.S.) is working as a hay and forage engineer with CLAAS of America, Omaha, NE. His education at BSE has prepared him well for the application of instrumentation, interpretation of data, designing and testing new components.

May 2012 GRADUATION

Agricultural Engineering

Kurtis Charling
Rebecca Dornbierer
Benjamin Schudel
Travis Wieser

Biological Systems Engineering

Catheryn Amenta
Stephanie Berger
Tyler Borcyk
Elizabeth Cowles
Cameron Cuning
Aleck Erickson
Geoffrey Gross
Haley Hatter
Suzanne Higgins
Elizabeth Hungerford
Seely Kaufmann
Abby Kelly
Ghassan Softa
Derek Shafer
Danielle Smith
Ghassan Softa
Brian Taylor
Steven Walker
Jonathan Zegers

Mechanized Systems Management

Stephen Boggs
Blake Ebbers
Travis Gove
Anthony Klein
Michael Miller
Matthew Rahe
Brandon Ryan
Jeremy Schreiber
Mark Spangler
Leo Steffel
Derek Williams

August 2012 GRADUATION

Agricultural Engineering

Wesley Schaardt
Jared Speichinger

Mechanized Systems Management

Paulo Luchiari
Tim Homstad
Jared Speichinger

Master of Science

Michael McKinney, ENVE
Quentin Dudley, BSEN/AGEN
Rachna Dhir, BSEN/AGEN

December 2012 GRADUATION

Agricultural Engineering

Lawrence Ross

Biological Systems Engineering

Kayla Anderson
Bobbi Balogh
Brendan Feehan
Michaela Fischer
Anthony Fleck
Timothy Kinoshita
Xiangcong Mao
Dianne Norris
Brandon Perry
Rachel Remund
Kaitlin Shanahan
Sihan Sun
Marc Uzman

Mechanized Systems Management

Eric Bolton
Trenton Buss
Dustin Fagan
Joseph Guenther
Dean Janke
Jacob Preister
Sean Rogers
William Smith
Zach Spurlock

Master of Science

Brian Watt, BSEN/AGEN

Ph.D.

Kim Cluff

What's New?

Update your profile at:
bse.unl.edu

Select Alumni Update under
Department heading.
Inclusion in the newsletter is
optional.

THE DEAN'S LIST

Spring Semester 2012

AGEN

Adam Emanuel
Mark Hilderbrand*
Caleb Lindhorst
David Lindquist
Shane Manning
Noel Menard
Robert Olsen
Luke Prosser
Wyatt Stubbs
Joseph Timmons
Joshua Tomjack

BSEN

Paula Jean Andrie
John Paul Bader*
Brian Barnes
Dana Becker
Stephanie Berger
Jared Beyersdorf*
Tyler Borczyk*
Tasneem Bouzid
David Bunker
Courtney Cahoy
Jacob Campbell
Erica Carder
Kathryn Conroy
Elizabeth Cowles*
Joseph Dougherty
Zachary Duncan
Alexander Eggert
Alek Erickson
Skylar Falter
Eric Farris*
Brendan Feehan
Michaela Fischer*
Anthony Fleck
Mikayla Freese*
Maria Hall

Connor Hansen
Calvin Harman
Haley Hatter
Matthew Hedrick*
Suzanne Higgins*
Charles Hinds*
Richard Horrocks
Emily Hubl
Bradley Hugenthorn
Elizabeth Hungerford*
Kathleen Kendall
Timothy Kinoshita*
Emily Klimisch
Monica Krause
Larissa Krenk*
Tyler Kruse
Olivia Lambdin
Rachel Lemke
Natalie Lenners
Yang Liu
Brenden Lopp
Marissa McCormick
Linkai Mei*
Jeremiah Meints
Jackson Miller
Keith Miller
Erik Moore
Spencer Moore
Rachel Morford*
Mallory Morton
Cat Nguyen*
Sheridan Nusz
Emily Olig
Jared Ostdiek*
Keith Ozzane
Kailey Parr*
Ian Parsley
Nicholas Phillips
Alexander Pieper

Joshua Pierce
Matthew Pirog*
Daniel Reiff
Nikolai Reitz
Rachel Remund*
Justin Rosenbohm
Zachary Roth
Lukas Samuelson
Kara Scheel
Rachael Schmidt
Alyssa Schrack
Nicole Schuster
Alexander Sellers
Derek Shafer
Cole Sievers
Jacob Sison-Martinez
Riley Smith
Danielle Smith
Katelyn Stanley
Hillary Stoll
Christopher Sullivan
David Svoboda
David Szalewski
Nhat Tran
Max Twedt
Riley Vanek
Mitchell White
Aaron Wiese
Lauren Wondra
James Yong*
Shelby Young
Jonathan Zegers

MSYM

Aaron Blase
Mark Spangler

* indicates 4.0 gpa

Fall Semester 2012

AGEN

Adam Emanuel*
Matthew Favinger
Shane Forney
Adam Frerichs
Benjamin Halvorson*
Ryan Hanousek
Mark Hilderbrand
Philip Hochstetler
Shane Manning
Joshua Meyer
Robert Olsen*
Christopher Reimers
Anna Sorensen
Joseph Timmons
Joshua Tomjack

BSEN

Ellie Ahlquist*
Paula Andrie
Tara Asgarpour
John Bader
Bobbi Balogh
Brian Barnes
Dana Becker
Jared Beyersdorf*
Chase Blazek
Tasneem Bouzid*
Cole Bowdino
David Bunker
Courtney Cahoy
Jacob Campbell
Erica Carder
Brinson Chapp
Colin Chatterton
Kathryn Conroy
Christopher Davidson*
William Denton
Joseph Dougherty
Drew Dudley
Katherine Dudley
Zachary Duncan
Collin Erickson
Skylar Falter
Eric Farris

Brendan Feehan
Michaela Fischer
Anthony Fleck
Nicholas Gerken
Riley Giesler
Nathan Giles
Kari Heck
Matthew Hedrick
Charles Hinds
Richard Horrocks
Cody Houdesheldt
Lane Hovey*
Bradley Hugenthorn
Sara Hutcheson
Zachary Janeczek
Benjamin Joekel
Hayden Kaderly
Kathleen Kendall
Timothy Kinoshita*
Emily Klimisch*
Ted Kocher
Monica Krause
Larissa Krenk*
Olivia Lambdin*
Rachel Lemke
Natalie Lenners
Brenden Lopp
Mitchell Maguire
Nathaniel Mannebach
Marissa McCormick
Jeremiah Meints
Keith Miller
Christopher Moore
Erik Moore
Spencer Moore
Rachel Morford*
Aubrey Mueller
Samantha Nelson*
Cat Nguyen
Sara Novotny
Emily Olig
Jared Ostdiek
Breck Ostrander
Keith Ozzane
Kailey Parr

Ian Parsley
Brandon Perry
Nicholas Phillips
Quinton Reckmeyer
Daniel Reiff
Nikolai Reitz
Rachel Remund*
Christian Reynolds
Justin Rosenbohm
Lukas Samuelson
Kara Scheel
Nicole Schuster
Alexander Sellers
Cole Sievers
James Sinclair
Jacob Sison-Martinez*
Riley Smith
Hillary Stoll*
Christopher Sullivan
Ryan Sumpter*
David Svoboda
David Szalewski*
Jared Thomsen*
Nhat Tran
Samantha Triba
Marc Uzman
Alex Van Lent
Riley Vanek
Kyle VerMaas
Joseph Wahlmeier*
Emily Waring
Katelyn Watts
Megan White
Mitchell White
Taylor Wiese
Jacob Wilson
James Yong

MSYM

Aaron Blase
Scott Bohn *
Derek Bracht
Zachary Hansen *
Kerry McPheeters *

* indicates 4.0 gpa

Plan now to attend

Return reservation by **April 5** to:
BSE Spring Banquet, Atten: Eileen Curtis
Biological Systems Engineering Department
200 CHA University of Nebraska-Lincoln
Lincoln, NE 68583-0726
Phone: 402-472-3905
ecurtis1@unl.edu

Name(s)		
Address		
City	State	Zip
Phone	E-mail	
No. attending	@\$16/person =	Enclosed
No. attending	@\$12/student =	Enclosed

The next generation of BSE students could use your help. Your generous donations support student scholarships and special opportunities, as well as equipment for classrooms and laboratories. Please consider making a donation to the Biological Systems Engineering Excellence Fund to provide student programs and scholarships. If you prefer, you can establish your own fund and name it for a family member, friend or mentor.

To arrange a gift, contact:

Josh Egley, (CASNR/MSYM)

402-458-1202

jegley@nufoundation.org

OR

Karen Moellering (COE, AGEN/BSEN)

402-458-1179

kmoellering@nufoundation.org

Spring Banquet 2013

Annual Awards and Recognition Dinner

Alumni
Parents
Students
Faculty
Staff

Senior Design Project Exhibits
Awards & Accomplishments of
Students, Faculty, and Alumni
BSE 2013 Hall of Fame

Friday April 12, 2013

Nebraska East Union, Arbor Suite, 3rd Floor

5:30 PM – Student Design Exhibits

6:30 PM – Dinner

7:30 PM – Program

More on
Page 15

Make reservations by April 5

Contact:

BSE Spring Banquet, Atten: Eileen Curtis
Biological Systems Engineering Department
200 CHA University of Nebraska-Lincoln
Lincoln, NE 68583-0726

Phone: 402-472-3905

ecurtis1@unl.edu

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